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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/514,412	06/29/2005	Joerg Roth	DASI3001/EJD	4371

23364 7590 06/18/2009

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ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
06/18/2009	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/514,412
Filing Date: June 29, 2005
Appellant(s): ROTH ET AL.

Felix J. D'Ambrosio
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/17/2009 appealing from the Office action mailed 7/08/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2003/0208290	Gillen	11-2003
2005/0177708	Stinus	8-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The rejections are hereby reproduced for convenience.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillen (US 2003/0208290) in view of Stinus et al. (US 2005/0177708).

Regarding claim 10:

Gillen discloses a programmable field measuring instrument/device comprising;

entire control takes place from a control (superordinated unit) center, (paragraph 0003, lines 13-20; figure 1);

field measuring device has a sensor (module) which acquires the process data and ADC converts it to digital form (paragraph 0025, lines 1-4, fig 1);

a control unit or processor for evaluating/processing the measured signal (paragraph 0025, lines 4-8) connected to sensor module (figure 1 sensor connected to control unit);

communication module for communication with control unit through data bus line (paragraph 0027, lines 1-6);

a reprogrammable device/memory in field measuring device to install new control program (paragraph 0008, lines 18-38), and the connector terminal serves as update interface to transfer new control programs (paragraph 0031, lines 1-4);

the control unit, the microprocessor included in the device are interpreted as logic devices and are reprogrammable (figure 1; paragraph 0008, lines 16-24; paragraph 0025).

Gillen discloses all of the subject matter as described above except for specifically teaching that at system start, both hardware and software are configured on said reprogrammable logic device LD in a desired fashion thereby matching the particular demands of the application of said sensor module SM.

However, Stinus in the same field of endeavor discloses a programmable field mounted device where at system start, both hardware and software are configured on said reprogrammable logic device LD in a desired fashion thereby matching the particular demands of the application (the field device have a memory, and first memory area is storing programmable first device configuration, see paragraphs 0016-0017, i.e. the memory area has device or hardware configuration; and paragraphs 0008 and 0049).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to get the field device configurable at the system start, both by means of software and hardware as taught by Stinus in the Gillen system in order to make it

useful by making the required modifications in the software in accordance with the hardware for a particular application and also in a situation like power failure to get the device reconfigured for the assigned task.

Regarding claim 11:

Gillen discloses all of the subject matter as described above and further discloses that programmable field device 10 has communication module for communication between control unit and control (superordinated) center (fig 1, paragraph 0027, lines 1-5).

Regarding claim 12:

Gillen discloses all of the subject matter as described above and further discloses that the field measuring device 10 has sensor module (fig 1, paragraph 0025, lines 1-4).

Regarding claim 13:

Gillen discloses all of the subject matter as described above and further discloses that the field measuring device 10 has digital components of (sensor, ADC) sensor module (fig 1, paragraph 0025, lines 3-8).

Regarding claim 14:

Gillen discloses all of the subject matter as described above and further discloses that the field measuring device has control unit, processor, a memory with different control programs (paragraph 0016, lines 1-4; paragraph 0025, line 6).

Regarding claim 15:

Gillen discloses all of the subject matter as described above and further discloses that the field measuring device's functionality can be changed by a control program which is called from the memory during the initialization/configuration of control unit (designated as SOPC) (paragraph 28, lines 1-5).

Regarding claim 16:

Gillen discloses all of the subject matter as described above and further discloses a data interface 22 with databus line for communication according to Profibus PA standard, Foundation Fieldbus Controller, CAN Controller (paragraph 0027, lines 8-14).

Regarding claim 17:

Gillen discloses all of the subject matter as described above and further discloses that the input/output unit connected to the control unit for indicating outputting values, manual (analog) inputting values (fig 1, paragraph 0027, lines 1-6).

Regarding claim 18:

Gillen discloses all of the subject matter as described above and further discloses that the field measuring device 10 has functionality (functional block) in form of (software) control program (fig 1, paragraph 007, lines 1-5).

Regarding claim 19:

Gillen discloses all of the subject matter as described above and further discloses that the flexible (reprogrammable) functionality can be achieved by configuring the device by Foundation Fieldbus, Profibus (paragraph 0027, lines 8-14).

(10) Response to Argument

Prior to responding to the arguments, the Examiner would like to review the references relied upon in the previous rejection of the claims.

Description of Gillen reference

Gillen discloses a programmable field measuring instrument used in process automation technology, field measuring devices can measure different process variables as pressure, temperature, volume flow etc. (paragraphs 0003 and 0006) and with the programmable field measuring device of Gillen the different functionalities are possible for different process variables to be measured. The field measuring device at the start runs initialization routine of control unit (paragraphs 0016-0017), for measuring different variants e.g. temperature, pressure; the field measuring device is used with a sensor and measure the desired variable with the aid of software in control unit that is for that specific variable (paragraphs 0028-0029). In this way the device matches the user demand for a particular application. The device is programmable that is used for desired application with different software that may be stored in the electrically erasable memory (18 in the figure) to reprogram and configure the device.

Description of Stinus reference

Stinus discloses a programmable field mounting device and a method for reconfiguration of the device with a software code (form the memory areas 1 and 2 in figure 2). The field device can measure process variables as pressure, temperature, mass flow rate etc. and additional functionalities relate to start up of field device are implemented by reconfigurations with modifications to the software (paragraph 0005). The reconfiguration of the device can be done at start or during operation of the device by programming the device with software code for that functionality (paragraphs 0016-0017 and 0031). The programming or configuration is implemented by replacing the software to reprogram the field device by manufacturer or by the user during the start up of the device or during the operation (paragraphs 0055-0056).

Response to arguments

Appellant states that the references are in same field of endeavor, but Gillen does not disclose a modular design. The examiner disagrees. First the Appellant describes the problem in the art as if a Coriolis mass flowmeter is replaces with electromagnetic flow meter it necessitates the replacement of entire field device (page 3, lines 19-21 original disclosure) and then provides solution with a programmable field device for process automation. The modules of the device are programmable and meet the particular demand of application by configuring the hardware and software at system start. Gillen is principally teaching the same idea of programmable field device that is programmed during the start of initialization to realize different functionalities

(paragraphs 0003 and 0028) without replacement of the entire field device. Also the field device of Gillen is programmed to encompass number of variables as measurement signal acquisition, signal evaluation and calibration, further to measure a different kind of variable in terms of different measurement principle (as if temperature is to be measured in place of pressure) the sensor is exchangeable and the same field device measure the different process variables (paragraph 0029), as clear the teachings of Gillen are similar with the use of different terminology as the disclosed device in both cases i.e. Gillen and present application under consideration, is programmable and for measurement of different variable the sensor is exchangeable that suggests a part/module replaced in the system without affecting the functionality of the device. Therefore, the rejection is reasonable and should be sustained.

Appellant concedes that the reconfigurable logic device is such as that available from Altera under mark Excalibur (page 7, lines 3-5 original disclosure), that means the claimed reconfigurable logic device that configures at start is not the inventive idea in present application.

Appellant state that Stinus does not disclose the modules are in the form of reprogrammable logic device, and does not provide reconfiguration of hardware and software at start. The examiner disagrees. Stinus provides a programmable field measuring device as shown in figure 1, for measuring variables like mass flow rate, pressure and temperature etc. For implementing different functionalities the field device

need to be reprogrammed/reconfigured (paragraph 0008). As it is clear the programmable field device measures different variables and perform additional functionalities (paragraphs 0005 and 0049) without replacing the field device, but the only requirement is to reprogram the field device. Further about the appellant's alleged statement about Stinus not providing reconfiguration of logic device hardware and software at start, examiner points out that Stinus clearly teaches the reconfiguration of field device. Stinus starts with the process variables measured with field devices (paragraph 0002) and the additional functions for field devices that are implemented by use of software on the field device (paragraphs 0005-0006). But the reconfigurable field device of Stinus is programmable according to the functionalities described in the background. The configuration of the device for additional functionalities relate to start-up of the field device (paragraphs 0005, 0015-0017) that is the device itself or the hardware is configured with the software configuration. Also Stinus does not states that the reconfiguration can not be done at the start, but specifically describes the reprogramming for reconfiguring the device (paragraph 0049) and to reconfigure the device separate code reprograms the software that is stored in the memory by a manufacturer and by user during the start up of the device or during the operation (paragraphs 0055-0056).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Hirdepal Singh

June 15, 2009

/H. S./

Examiner, Art Unit 2611

Conferees:

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